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Chairman Seaborg
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THRU: General Manager Donald S. Kull for

BROOKHAVEN ANNOUNCEMENT OF TREATMENT OF FIVE MARSHALLESE

Enclosed for your information is a public announcement that five Marshallese have undergone thyroid surgery in this country and that three of the patients were found to have malignant thyroid conditions. The announcement has been reviewed and approved by the Division of Biology and Medicine and the Office of the Assistant General Manager for Research and Development. It will be mailed from Brookhaven on Monday, October 13. We do not plan a headquarters release.

(signed) John A. Harris

John A. Harris, Director
Division of Public Information

Enclosure

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BROOKHAVEN TEAM REPORTS ON 1969 EXAMINATION OF MARSHALLESE ISLANDERS

Upton, N. Y.--Dr. Robert A. Conard (MD), head of the medical team from the AEC's Brookhaven National Laboratory responsible for monitoring the Marshall Islanders who were accidentally exposed to fallout from a 1954 Bikini bomb test, reported five patients with thyroid abnormalities (nodules) were brought back to the United States for thyroid surgery as a result of the 1969 yearly medical survey. Three of the cases were found to be malignant, but one is believed to be unrelated to radiation exposure.

They arrived at Brookhaven National Laboratory on August 26 and returned to the Marshall Islands on September 21. The surgery was performed on September 8, 9, and 10 by Dr. Brown Dobyns at the Cleveland (Ohio) Metropolitan General Hospital. The patients and their diagnoses are as follows:

One 36-year-old female from Rongelap was an adult at the time of exposure, who had received 160 rads to the thyroid from radioactive iodines in the food and water plus 175 rads of whole body exposure, and whose thyroid nodules did not develop to the detectable stage until the March, 1969 medical survey. She had a partial thyroidectomy to remove a nodule which the pathologists diagnosed as a low-grade (degree) malignancy.

Two 22-year-old females from Rongelap who were seven years old at the time of the fallout, who received 500-1000 rads to the thyroid from radioiodines in the food and water, plus 175 rads of whole body exposure. One had a partial thyroidectomy to remove a nodule which proved to be benign. The other had a complete thyroidectomy removing a tumor diagnosed as malignant.

A 22-year-old male from Rongelap, who had received the same dose as the females, had a partial thyroidectomy to remove a nodule which proved to be benign.

One 34-year-old female from Utirik, who received 15 rads to the thyroid from food and water plus 14 rads of whole body exposure, had a hemi-thyroidectomy to remove a tumor diagnosed as malignant. This case is not believed to be due to radiation exposure in view of the low dose received and the lack of thyroid abnormalities noted in Utirik children, in contrast to the higher proportion of abnormalities in the Rongelap children.

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An unexpected wind shift during the 1954 test carried the fallout from Bikini at the western end of the Marshall Islands over several islands located east of Bikini. Nearest and most heavily exposed were 64 Marshallese at Rongelap. There were also 18 Marshallese at Ailingnae and 157 at Utirik receiving a much lesser exposure. These people are examined on a regular schedule. To provide a comparison with the exposed populace, a control group of about 200 unexposed Marshallese is also examined, but on a less frequent schedule.

There were 19 children in the Rongelap population under the age of 10 at the time of exposure. The estimated dose to their thyroids was from 500 to 1400 rads. Seventeen of these children have developed thyroid abnormalities and some show growth retardation. Fifteen of the children have been operated on for thyroid nodules, including the case found to be malignant this month. This is the first time a malignant thyroid condition has developed in the Rongelap group who were exposed as children. According to Dr. Conard, the children show a higher incidence of thyroid abnormalities because their thyroid glands were smaller and probably received a larger comparative radiation dose.

There were six children under 10 years on Ailingnae. They received from 275-600 rads. The 40 children on Utirik in the same age group received thyroid doses from 55 to 125 rads. There has been no development of abnormalities in either group. The selection of age 10 as a group designation did not occur until a few years ago and was done primarily as a result of statistical observations.

The Rongelap inhabitants who were over 10 years at the time of exposure received a thyroid dose estimated at 355 rads. Eight per cent developed thyroid abnormalities. The exposed adult populations on Utirik and Ailingnae, like the unexposed control population, has had a low incidence of thyroid abnormalities, probably normal, statistically, for the size of their populations.

In total, four malignant thyroid conditions have been found, three of them from the Rongelap population. Of those, two were adults and one was a child at the time of exposure. The fourth case, the adult patient from Utirik treated this year, is not believed to be related to radiation exposure.

The term rad means radiation absorbed dose.

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Dr. Conard explained that the reason the thyroid gland received a much larger dose than the whole body is because of a process called selective absorption by the thyroid of radioactive iodine from food and water ingested by the Marshallese following the fallout.

The five Marshall Islanders arrived at Brookhaven National Laboratory on August 26, where they were carefully and thoroughly examined, including whole body counts which were normal. In addition to Dr. Brown Dobyns, who performed the surgery, other consultants included Dr. Shields Warren and Dr. William A. Meissner, both with the Cancer Research Hospital, New England Deaconess Hospital, Boston; Dr. J. Edward Rall and Dr. Jacob Robbins, both with the National Institutes of Health; and Dr. Bentley Colcock, Leahy Clinic, Boston; and Dr. John D. Reid, Cleveland Metropolitan General Hospital.

Accompanying the five patients to this country was Dr. Ezra Riklon, practitioner from the Marshall Islands which are under the jurisdiction of the Trust Territory of the Pacific Islands. Dr. Riklon participated in the examinations and consultations and was present in the operating room for all operations. Upon return to the Marshall Islands he will supervise the thyroid hormone treatment of all people who were exposed. It is hoped that the thyroid hormone treatment will not only prevent the development of further malignancies, but also help overcome the growth retardation in the children who have shown it. Dr. Conard noted that some enhancement of growth has taken place since the treatment was started in 1965.

Generally, the exposed population is in good health and good spirits. Over the years a number of deaths have occurred, but none were attributed to the fallout or its effects.

Dr. Conard noted that the 1969 examination was the 15th post-exposure year in which the Atomic Energy Commission's Division of Biology and Medicine has examined and cared for the exposed Marshallese people. The surveys are carried out jointly with the Medical Department of the Trust Territory of the Pacific Islands. The results of these examinations are reported regularly to the scientific and medical communities.

Brookhaven National Laboratory is operated by Associated Universities, Inc. (AUI) for the U. S. Atomic Energy Commission. AUI is a national, nonprofit research management organization sponsored by Columbia, Cornell, Harvard, Johns Hopkins, Massachusetts Institute of Technology, Pennsylvania, Princeton, Rochester and Yale Universities. In 1956, AUI established and currently operates for the National Science Foundation the National Radio Astronomy Observatory with facilities in Green Bank, West Virginia; Charlottesville, Virginia; and Kitt Peak, Arizona.

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